encoded program streams to form the slotted transport stream, wherein each transport packet from a single program stream is separated by N-1 transport packets.

8.   The apparatus of claim 7, wherein the each program is encoded at a clock rate of CLK/N.

9.   The apparatus of claim 7, further comprising a file server coupled between said multiplexer and said N transport encoders for storing the transport encoded program streams.

10.   The apparatus of claim 7 wherein a NULL program is inserted into every N-1 slot in the slotted transport stream where such slot is not associated with a program.

11.   An apparatus for generating N programs, where N is an integer, to produce a slotted transport stream respectively having N slots, comprising:

a transport clock source CLK;

N transport encoders for respectively receiving said N programs and producing N program streams;

a frequency divider coupled between the transport clock source and the respective N transport encoders to divide a timing signal CLK from said transport clock source into N timing signals;

N buffer memories respectively coupled to said N transport encoders; and

a switch, selectively coupled to said N buffer memories for selectively coupling to an output, a packet from each of said N buffer memories, to produce said slotted transport stream.

REMARKS

In this Final Office Action, claims 1-5 are pending, of which claims 1-5 stand rejected. By this amendment, claims 1-4 have been amended and claims 6-11 have

been added. In view of both the amendment presented above and the following discussion, the applicant submits that none of the claims now pending in the application are indefinite or anticipated under the respective provisions of 35 U.S.C. §112 and §102. Thus, the applicant believes that all of these claims are now in allowable form.

Rejections

A. 35 U.S.C. § 112

1.   Claim 1

The Examiner has rejected claim 1 as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. The applicants respectfully traverse the rejection

In response, claim 1 has been amended to specifically define the limitation "N". In particular, claim 1 recites in part:

"defining N slots within said transport stream, where N is an integer, each of said N slots being associated with a respective plurality of non-contiguous transport packets, each of said respective non-contiguous transport packets being separated by N-1 transport packets;" (emphasis added).

The applicants have defined the limitation "N" as being an integer such that an integer number of slots are defined within the transport stream. As such, the applicants submit that claim 1 is not vague or indefinite, and fully satisfies the requirements under 35 USC §112 and is patentable thereunder. Therefore the applicants respectfully request that the rejection be withdrawn.

2.   Claim 4

The Examiner has rejected claim 4 for lack of proper antecedent basis for the limitation "replacement stream." Furthermore, the Examiner has rejected claim 4 for improperly depending from claim 1. The applicants respectfully traverse the rejection.

In response, claim 4 has been amended to properly depend from 1 claim In particular, claim 4, as amended, recites in part:

> "The method of claim 1, further comprising the step of replacing said one or more programs from said transport stream."

Furthermore, the limitation "replacement stream" has been cancelled from claim 4. Therefore the rejection for improper antecedent basis is now moot.

As such, the applicants submit that claim 4 properly depends from claim 1, and fully satisfies the requirements under 35 USC §112 and is patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

3.   Claims 2 and 3

The Examiner has rejected claims 2 and 3 for improperly depending from claim 1, as recited in the preamble of each claim. The applicants respectfully traverse the rejection.

In response, the applicants have amended the preamble of dependent claim 2 to properly depend from independent claim 1. In particular, the preamble of claim 2 has been amended to recite in part:

> "The method of claim 1 wherein, including NULL transport packets within said transport stream being formed comprises the steps of:"

As such, the applicants submit that claim 2 properly depends from independent claim 1, and fully satisfies the requirements under 35 USC §112 and is patentable thereunder. Furthermore, claim 3, depends from claim 2 and recites additional limitations thereof. As such and for the same reason, the applicants submit that claim 3 fully satisfies the requirements under 35 USC §112 and is patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

B.   35 U.S.C. § 102

1. Claims 1-5

The Examiner has rejected claims 1-5 under 35 U.S.C. § 102 as being anticipated by Slattery (U.S. Patent No. 6,246,701, issued June 12, 2001). The applicants respectfully traverse the rejection.

Claim 1, as amended, recites:

"In an MPEG information distribution system, a method for forming a transport stream having a bitrate BR and including one or more programs, said method comprising the steps of:
    defining N slots within said transport stream, where N is an integer, each of said N slots being associated with a respective plurality of non-contiguous transport packets, each of said respective non-contiguous transport packets being separated by N-1 transport packets;
    including, within said transport stream being formed, up to N transport encoded programs, where each transport encoded program is associated with one of said N slots and has a bitrate of BR/N; and
    in the case of less than N transport encoded programs being included within said transport stream being formed, including NULL transport packets within said transport stream being formed, said NULL packets forming NULL programs within said transport stream being formed." (emphasis added).

Slattery fails to disclose the limitation of "defining N slots within said transport stream, where N is an integer, each of said N slots being associated with a respective plurality of non-contiguous transport packets, each of said respective non-contiguous transport packets being separated by N-1 transport packets." Furthermore, Slattery fails to disclose the limitation of "including, within said transport stream being formed, up to N transport encoded programs, where each transport encoded program is associated with one of said N slots and has a bitrate of BR/N;"

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing Connell v. Sears, Roebuck & Co., 722 F.2d

1542, 220 USPQ 193 (Fed. Cir. 1983) (emphasis added)). The Slattery reference fails to disclose each and every element of the claimed invention, as arranged in the claim.

In particular, Slattery merely discloses a transport stream, which includes variably compressed program data bearing transport packets and may include one or more null transport packets. "Null transport packets are inserted into a time slot of the transport stream to maintain the predetermined bit rate of the transport stream when none of the compressed program data bearing transport packets are available for insertion into the received transport stream at the respective transport packet time slot" (see Slattery, Col. 10, lines 27-37). Nowhere in the Slattery reference is there any teaching of "defining N slots within the transport stream." Moreover, nowhere in the prior art reference is there any teaching that "each of the N slots are associated with a respective plurality of non-contiguous transport packets, and each of said respective non-contiguous transport packets are separated by N-1 transport packets." Slattery is devoid of any teaching regarding the arrangement of the packets in the transport stream.

The "time slots" disclosed in Slattery merely represent a moment in time where a packetized elementary stream (PES) exists or the time a PES would exist. The time slot is defined by the time required to process a PES having a particular length. For example, "a particular picture may take an unexpectedly longer time to encode than previously anticipated, thereby causing a delay in production of the encoded video. Such time slots are filled with null transport packets" (see Slattery, Col. 40, lines 8-24). This is completely different from the applicants' invention. In particular, the applicants claim that "each transport encoded program is associated with one of the N slots." Each of N information sub-stream within an information stream comprises a program (e.g., image information and related audio information such as a movie or television program) that is transport encoded according to a first clock (see Specification, page 5, lines 22-28). That is, each of the N encoded programs is associated with a particular time slot (see applicants' FIG. 1).

Furthermore, the applicants claim that each transport encoded program associated with one of the N slots <u>has a bitrate of BR/N</u>. That is, "the slotted transport stream T comprises a plurality of substantially fixed length data packets, with each sequential data packet used for alternatingly different programs. That is, a packet associated with program 1 is immediately followed by a packet associated with program 2, which is immediately followed by a packet associated with program 3, which is in turn immediately followed by a packet associated with program 1 (and so on). Thus, a bit rate BR associated with the slotted transport stream T is divided in a substantially equal manner among N, illustratively three, included programs such that each of the three programs within the slotted transport program T has a bit rate of BR divided by 3" (see specification, page 6, lines 1-11 and FIG. 1). By contrast, Slattery is completely silent regarding the bitrate of each transport encoded program associated with one of the N slots.

As such, the applicants submit that claim 1 is not anticipated under 35 U.S.C. §102 and is patentable thereunder. Furthermore, claims 2-6 depend, either directly or indirectly, from independent claim 1 and recite additional limitations thereof. As such and for the same reasons, the applicants submit that these dependent claims are not anticipated under 35 U.S.C. §102 and are patentable thereunder. Therefore, the applicants respectfully request that the rejection be withdrawn.

Conclusion

Thus, the applicant submits that none of the claims, presently in the application, are obvious under the provision of 35 USC § 103. Consequently, the applicant believes that all these claims are presently in condition for allowance. Accordingly, reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone <u>Mr. Eamon J. Wall, Esq.</u> at

(732) 530-9404 so appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

_9/27/01_

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CERTIFICATE OF MAILING under 37 C.F.R. § 1.8(a)

I hereby certify that this correspondence is being deposited on _October 4, 2001_ with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Linda DiNardi

Signature

Oct 4, 2001

Date of signature